

OPERATOR'S MANUAL & PARTS

Chain Saw CS3814/CS4116



Before using our products, please read this manual carefully to understand the proper use of your unit.





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Contents



SAFETY FIRST

Instructions contained in warnings within this manual marked with a

symbol concern critical points which must be taken into consideration to prevent possible serious bodily injury, and for this reason you are requested to read all such instructions carefully and follow them without fail.

WARNINGS IN THE MANUAL

▲WARNING

This mark indicates instructions which must be followed in order to prevent accidents which could lead to serious bodily injury or death.

▲IMPORTANT

This mark indicates instructions which must be followed, or it leads to mechanical failure, breakdown, or damage.

NOTE

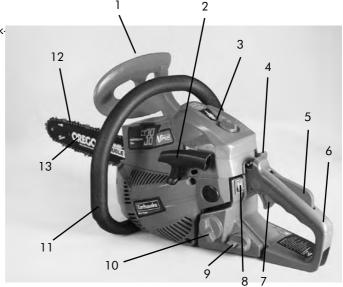
This mark indicates hints or directions useful in the use of the product.

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Parts Location



- 1. Front hand guard and brake
- 2. Starter handle
- 3. Air filter cover
- 4. Choke knob
- 5. Throttle trigger lock
- 6. Rear handle
- 7. Throttle trigger
- 8. Engine switch
- 9. Fuel tank
- 10. Oil tank
- 11. Front handle
- 12. Saw chain
- 13. Guide bar
- 14. Primer Bulb





Symbols on the Machine





(1) Read operator's instruction book before operating this machine.



(2) Appropriate ear, eye, and head protection must be worn.



(3) Use the chain saw with two hands.



(4) Warning! Danger of kickback.



(5) Read, understand and follow all warnings.

Symbols on the Machine



For safe operation and maintenance, symbols are carved in relief on the machine. According to these indications, please be careful not to make any mistake.



(a). The port to refuel the "MIX GASOLINE" Position: near the fuel cap



(b). The port to refill the chain oil Position: near the oil cap



(c). Operate the engine switch Flipping the switch to the "O" position, immediately the engine stops. Position: rear at the left side of the rear handle



(d). Operate the choke knob Pull out the choke knob, close the choke; push in the choke knob, open the choke.

Position: rear at the right side of the rear handle.





(e). Adjust the oil pump

If you turn the rod by screwdriver follow the arrow to the "MAX" position, the chain oil flow more, and if you turn to the "MIN" position, less.

Position: Bottom of the power unit



Symbols on the Machine



H

(f). The screw under the "H" stamp is The High-speed adjustment screw. The screw under the "L" stamp is The Slow-speed adjustment screw. The screw up the "T" stamp is the Idle adjustment screw. Position: upper-left of the rear handle



(g). Shows the directions that the chain brake is released (white arrow) and activated (black arrow).

Position: Front of the chain cover



(h). Shows the direction of the saw chain installation. Position: Front of the chain cover



Before operating the product

- 1. Before using our products, please read this manual carefully to understand the proper use of your unit.
- 2. Never operate a chain saw when you are fatigued, ill, or upset, or under the influence of medication that may make you drowsy, or if you are under the influence of alcohol or drugs.
- 3. Operate the chain saw only in well ventilated areas. Never start or run the engine inside a closed room or building. Exhaust fumes contain dangerous carbon monoxide.
- 4. Never cut in high wind, bad weather, when visibility is poor or in very high or low temperatures. Always check the tree for dead branches which could fall during the felling operation.
- 5. Use safety footwear, snug fitting clothing and eye, hearing and head protection devices.



- 6. Always use caution when handling fuel. Wipe up all spills and then move the chain saw at least ten(10)feet (three(3) m) from the fueling point before starting the engine.
- 7. Eliminate all sources of sparks or flame (ie. smoking, open flames, or work that can cause sparks) in the areas where fuel is mixed, poured, or stored.

Do not smoke while handling fuel or while operating the chain saw.

- 8. Do not allow other persons to be near the chain saw when starting the engine or cutting a wood. Keep bystanders and animals out of the work area. Children, pets, and bystanders should be a minimum of 30 feet (10m) away when you start or operate the chain saw.
- 9. Never start cutting until you have a clear work area, secure footing, and planned retreat path from the falling tree.
- 10. Always hold the chain saw firmly with both hands when the engine is running. Use a firm grip with thumb and fingers encircling the chain saw handles.
- 11. Keep all parts of your body away from the saw chain when the engine is running. Before you start the engine, make sure the saw chain is not contacting anything.



- 12. Always carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body.
- 13. Always inspect the chain saw before each use for worn, loose, or changed parts. Never operate a chain saw that is damaged, improperly adjusted, or is not completely and securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released.
- 14. All chain saw service, other than the items listed in the Operator's Manual, should be performed by competent chain saw service personnel. (e.g., if improper tools are used to remove the flywheel, or if an improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur which could subsequently cause the flywheel to disintegrate).
- 15. Always shut off the engine before setting it down.
- 16. Use extreme caution when cutting small size brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.
- 17. When cutting a limb that is under tension, be alert for spring back so that you will not be struck when the tension in the wood fibers is released.
- 18. Keep the handles dry, clean and free of oil or fuel mixture.



19. Guard against kickback. Kickback is the upward motion of the guide bar which occurs when the saw chain at the nose of the guide bar contacts an object. Kickback can lead to dangerous loss of control of the chain saw.

KICKBACK SAFETY PRECAUTIONS FOR CHAIN SAW USERS



Kickback may occur when the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut. Tip contact in some cases may cause a lightning fast reverse reaction, kicking the guide bar up and back towards the operator. Pinching the saw chain along the top of the guide bar may push the

guide bar rapidly back towards the operator. Either of these reactions may cause you to lose control of the saw which could result in serious personal injury.

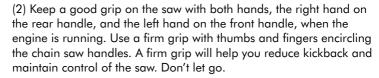
Do not rely exclusively on the safety devices built into your saw. As a chain saw user you should take several steps to keep cutting jobs free from accident or injury.

(1) With a basic understanding of kickback you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.







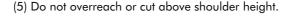




(3) Make certain that the area in which you're cutting is free from obstructions. Do not let the nose of the guide bar contact a log, branch, or any other obstruction which could be hit while you are operating the saw.



(4) Cut at high engine speeds.

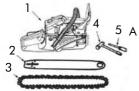




- (6) Follow manufacturers sharpening and maintenance instructions for saw chain.
- (7) Only use replacement bars and chains specified by the manufacturer or the equivalent.

Installing Guide Bar / Chain Earthquake





A standard saw unit package contains the items as shown below.

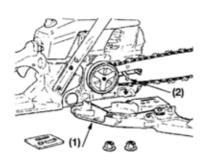
- (1) Power unit
- (2) Guide bar
- (3) Saw chain
- (4) Plug wrench
- (5) Screwdriver for carburetor adjustment

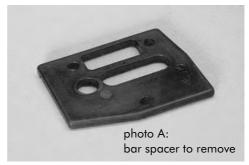
Open the box and install the guide bar and the saw chain on the power unit as follows.



The saw chain has very sharp edges. Use protective gloves for safety.

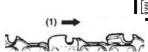
- 1. Pull the guard towards the front handle to check that the chain brake is not on.
- 2. Loosen a nut and remove the chain cover. Then, remove bar spacer used for shipping (see photo A).
- 3. Wrap the chain onto the sprocket and, while fitting the saw chain around the guide bar, mount the guide bar to the power unit. Adjust the position of chain tensioner nut.





Installing Guide Bar / Chain Earthquake

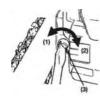






Pay attention to the correct direction of the saw chain.

(1) Moving direction



- 4. Mount the guide bar then fit the saw chain around the bar and sprocket.
- 5. Fit the chain tensioner nut into the lower hole of the guide bar, then install the chain cover, and fasten the mounting nut to finger tightness.
- 6. While holding up the tip of the bar, adjust the chain tension by turning the tensioner screw until the tie straps just touch the bottom side of the bar rail.
- 7. Tighten the nuts securely with the bar tip held up 10 ft lbs (100-130 inch lbs).

Then check the chain for smooth rotation and proper tension while moving it by hand. If necessary, readjust with the chain cover loose.

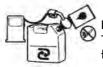
- 8. Tighten the tensioner screw.
- (1) Loosen
- (2) Tighten
- (3) Chain tension adjusting screw

AIMPORTANT

It is very important to maintain the proper chain tension. Rapid wear of the guide bar or the chain coming off easily can be caused by improper tension. Especially when using a new chain, take good care of it since it should expand when first used.

Fuel and Chain Oil





Fuel

The engines are lubricated by Viper Engine Oil specially formulated for air-cooled 2-cycle gasoline engine use. If oil is not available, use an antioxidant added quality oil expressly labeled for air-cooled 2-cycle chain saw engine use.

RECOMMENDED MIXING RATIO GASOLINE 50 : OIL 1

These engines are certified to operate on unleaded gasoline. See chart for mixing.

GAS	OIL	RATIO
1 gallon	2.6 ounces	50:1
2.5 gallons	6.4 ounces	50:1



▲WARNING

The fuel is highly flammable. Do not smoke or bring any flame or sparks near fuel.

AIMPORTANT

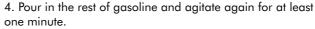
- 1. DO NOT USE FUEL WITH NO OIL(RAW GASOLINE) It will cause severe damage to the engine inner parts very quickly and void warranty.
- 2. DO NOT USE OIL FOR 4-CYCLE ENGINE USE or WATER COOLED 2-CYCLE ENGINE USE It can cause spark plug fouling, exhaust port blocking, or piston ring sticking and void warranty.

HOW TO MIX FUEL

- 1. Measure out the quantities of gasoline and oil to be mixed.
- 2. Put some of the gasoline into a clean, approved fuel container.
- 3. Pour in all of the oil and agitate well.

Fuel and Chain Oil







5. Put a clear indication on the outside of the container to avoid mixing up with gasoline or other containers.

CHAIN OIL

Use special chain saw oil all year round. Recommended for winter or summer use.



Do not use waste or regenerated oil that can cause damage to the oil pump.



nes in the bulb.









STARTING ENGINE

- 1. Untwist and remove the fuel cap. Rest the cap on a dustless place..
- 2. Put fuel into the fuel tank to 80% of the full capacity.
- 3. Fasten the fuel cap securely and wipe up any fuel spillage around the unit.
- 4. Put the switch to the "I" position.
- 5. Continuously push the priming bulk
 - (1) Oil
 - (2) Fuel
 - (3) Engine switch
 - (4) Choke knob
- 6. Pull out the choke knob. The choke will close and the throttle lever will then be set in the starting position.



When restarting immediately after stopping the engine. Set choke in the open position



Once the choke knob has been pulled out, it will not return to the operating position fully even if you press down on it with your finger. When you wish to return the choke knob to the fully open position, squeeze the throttle lever instead.

7. While holding the saw unit securely on the ground, pull the starter rope vigorously.







8. When firing occurs, push in the choke knob and pull the starter again to start the engine.



9. Allow the engine to warm up with the throttle lever pulled slightly.

AWARNING

Before you start the engine, make sure the saw chain is not contacting anything.



CHECKING OIL SUPPLY

After starting the engine, run the chain at medium speed and see if chain oil is scattered off as shown in the figure.

(1) Chain oil

The chain oil flow can be changed by inserting a screwdriver in the hole on bottom of the clutch side. Adjust according to your work conditions.

- (1) Chain oil flow adjusting shaft
- (2) Rich
- (3) Lean

AIMPORTANT

The oil tank should become nearly empty by the time fuel is used up. Be sure to refill the oil tank every time when refueling the saw.

ADJUSTING CARBURETOR

The carburetor on your unit has been factory adjusted, but may require fine tuning due to change in operating conditions.

Before adjusting the carburetor, make sure that provided are clean air/fuel filters and fresh, properly mixed fuel.





When adjusting, take the following steps:

AIMPORTANT

Be sure to adjust the carburetor with the bar chain attached.

1. H and L needles are restricted within the number of turn as shown below.

H needle -1/4

L needle -1/4

- 2. Start engine and allow it to warm up in low speed for a few minutes.
- 3. Turn idle adjusting screw (T) counter-clockwise so that saw chain does not turn. If idling speed is too slow, turn the screw clockwise.
- 4. Make a test cut adjust the H needle for best cutting power, not for maximum speed.
- (1) L needle
- (2) H needle
- (3) Idle adjusting screw

CHAIN BRAKE

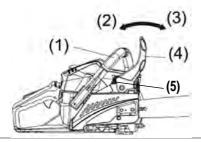
The chain brake is a device which stops the chain instantaneously if the chain saw recoils due to kickback.

Normally, the brake is activated automatically by inertial force.

It can also be activated manually by pushing the brake lever (Front handle guard) down toward the front.

When the brake operates, a white cone (5) pops up from the base of the brake lever.

(1) Front handle (2) Release (3) Brake (4) Front handle guard





To release brake, pull up the front handle guard toward the front handle till "click" sound is heard.



AWARNING

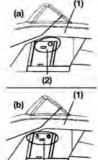
When the brake operates, release the throttle lever to slow down the engine speed. Continuous operation with the brake engaged will generate heat from the clutch and may cause damage.

Be sure to confirm brake operation on the daily inspection.

How to confirm:

- 1) Turn off the engine.
- 2) Holding the chain saw horizontally, release your hand from the front handle, hit the tip of the guide bar to a stump or a piece of wood, and confirm brake operation. Operating level varies by bar size.

In case the brake is not effective, ask our dealer inspection and repairing.



Carburetor anti-freeze mechanism

Operating chain saws in temperatures of $0 - 5^{\circ}$ C at times of high humidity may result in ice forming within the carburetor, and this in turn may cause the output power of the engine to be reduced or for the engine to fail to operate smoothly.

- 1) Cylinder cover
- 2) "Sunshine" mark
- 3) "Snow" mark
- a) Normal operating mode
- b) Anti-freeze mode

This product has accordingly been designed with a ventilation hatch on the right side of the surface of the cylinder cover to allow warm air to be supplied to the engine and to thereby prevent icing from occurring.

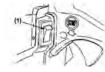
Under normal circumstances the product should be used in the normal operating mode, i.e., in the mode which it is set at the time of shipment.

However when the possibility exists that icing may occur, the unit should be set to operate in the anti-freeze mode before use



Continuing to use the product in the anti-freeze mode even when temperatures have risen and returned to normal, may result in the

engine failing to start properly or in the engine failing to operate at its normal speed, and for this reason you should always be sure to return the unit to the normal operating mode if there is no danger of icing occurring.



Stopping engine

- 1. Release the throttle lever to allow the engine idling for a few minutes.
- 2. Move the switch lever downward.
- (1) Engine switch



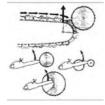
AWARNING

Before proceeding to your job, read "For Safe Operation" section It is recommended to first practice sawing easy logs. This also helps you get accustomed to your unit.

Always follow the safety regulations. The chain saw must only be used for cutting wood. It is forbidden to cut other types of material. Vibrations and kickback vary with different materials and the requirements of the safety regulations would not be respected. Do not use the chain saw as a lever for lifting, moving or splitting objects. Do not lock it over fixed stands. It is forbidden to hitch tools or applications to the P.T.O. that are not specified by the manufacturer.

It is not necessary to force the saw into the cut. Apply only light pressure while running the engine at full throttle.

Racing the engine with the chain seized in a cutaway can damage the clutch system. When the saw chain is caught in the cut, do not attempt to pull it out by force, but use a wedge or a lever to open the cut.



GUARD AGAINST KICKBACK

This saw is also equipped with a chain brake that will stop the chain in the event of kickback if operating properly. You must check the chain brake operation before each usage by running the saw at full throttle for 1 or 2 seconds and pushing the front hand guard forward. The chain should stop immediately with the engine at full speed. If the chain is slow to stop or does no stop then replace the brake band and



clutch drum before use.



It is extremely important that the chain brake be checked for proper operation before each use and that the chain be sharp in order to maintain the kickback safety level of this saw. Removal of the safety devices, inadequate maintenance, or incorrect replacement of the bar or chain may increase the risk of serious personal injury due to kickback.



Felling a Tree

- 1. Decide the felling direction considering the wind, lean of the tree, location of heavy branches, ease of job after felling, and other factors.
- 2. While clearing the area around the tree, arrange a good foothold and retreat path.
- 3. Make a notch cut one-third of the way into the tree on the felling side.
- 4. Make a felling cut from the opposite side of the notch and at a level slightly higher than the bottom of the notch.

▲WARNING

When you fell a tree, be sure to warn your neighboring workers of the danger.

- (1) Notch cut
- (2) Felling cut
- (3) Felling direction

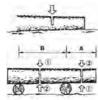


LOGGING AND LIMBING

AWARNING

- 1. Always ensure your foothold as well as stability of the tree.
- 2. Be alert to the rolling over of a cut log.
- 3. Read the instructions in "For Safe Operation" to avoid kickback of the saw.

Before starting work, check the direction of bending force inside the log to be cut. Always finish cutting from the opposite side of bending direction to prevent the guide bar from being caught in the cutaway.



Cutting an unpillowed log

Saw down halfway, then roll the log over and cut from the opposite side.

Cutting a pillowed log

In the area A in the picture right above, saw up from the bottom one-third and finish by sawing down from the top. In the area B, saw down from the top one-third and finish by sawing up from the bottom.



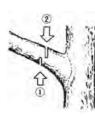
Limbing a felled tree

First check which way the limb is bent. Then make a shallow cut into the compressed side to prevent the limb from being torn. Cut through from the tensed side.



Be alert to the spring back of a cut limb.





Pruning

Cut up from the bottom, finish down from the top.

AWARNING

- 1. Do not use an unstable foothold or a stepladder.
- 2. Do not overreach.
- 3. Do not cut above shoulder height.
- 4. Always use both hands to grip the saw.

Maintenance





AWARNING

Before cleaning, inspecting or repairing your unit, make sure that engine has stopped and is cool.

Disconnect the spark plug to prevent accidental starting.

Maintenance after each use

1. Air filter

Dust on the cleaner surface can be removed by tapping a corner of the cleaner against a hard surface. To clean dirt in the meshes, split the cleaner into halves and brush in gasoline. When using compressed air, blow from the inside.

To assemble the cleaner halves, press the rim until it clicks.

2. Oiling port

Dismount the guide bar and check the oiling port for clogging.

(1) Oiling port

3. Guide bar

When the guide bar is dismounted, remove sawdust in the bar groove and the oiling port.

Grease the nose sprocket from the feeding port on the tip of the bar.

- (1) Grease port
- (2) Sprocket

Maintenance





4. Others

Check for fuel leakage and loose fastenings and damage to major parts, especially handle joints and guide bar mounting. If any defects are found, make sure to have them repaired before operating again May require extra grease tip



PERIODICAL SERVICE POINTS

1. Cylinder fins

Dust clogging between the cylinder fins will cause overheating of the engine. Periodically check and clean the cylinder fins after removing the air cleaner and the cylinder cover. When installing the cylinder cover, make sure that switch wires and grommets are positioned correctly in place.



2. Fuel filter

- (a) Using a wire hook, take out the filter from the filler port.
- (1) Fuel filter
- (b) Disassemble the filter and wash with gasoline, or replace with a new one if needed.

▲IMPORTANT

- After removing the filter, use a pinch to hold the end of the suction pipe.
- When assembling the filter, take care not to allow filter fibers or dust inside the suction pipe.

Maintenance



0.635 mm



3. Spark plug

Clean the electrodes with a wire brush and reset the gap to 0.635 mm as necessary. (.025 in.)

Spark plug type Champion CJ7Y



4. Sprocket

Check for cracks and for excessive wear interfering with the chain drive. If the wearing is found obviously, replace it with a new one. Never fit a new chain on a worn sprocket, or a worn chain on a new sprocket.

5. Front and Rear dampers

Replace if adhered part is peeled or crack is observed on the rubber part.

Maintenance of Chain / Bar



Saw chain



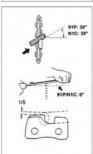


It is very important for smooth and safe operation to keep the cutters always sharp.



Your cutters need to be sharpened when:

- Sawdust becomes powder-like.
- You need extra force to saw in.
- The cut way does not go straight.
- Vibration increases.
- Fuel consumption increases.



Cutter setting standards:

AWARNING

Be sure to wear safety gloves.

Before filing:

- Make sure the saw chain is held securely.
- Make sure the engine is stopped.
- Use a round file of proper size for your chain.

Chain type: Oregon 91P/Carlton N1C

File size: 4.0mm

Place your file on the cutter and push straight forward.

Keep the file position as illustrated.

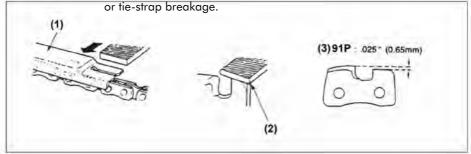
Maintenance of Chain / Bar



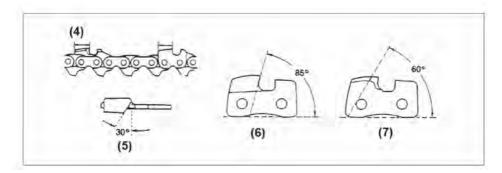
After every cutter has been set, check the depth gauge and file it to the proper level as illustrated.

▲WARNING

Be sure to round off the front edge to reduce the chance of kickback



(1) Appropriate gauge checker (2) Make the shoulder round (3) Depth gauge standard



Make sure every cutter has the same length and edge angles as shown below. (4) Cutting length (5) Filling angle (6) Side plate angle (7) Top plate cutting angle



▲WARNING

This saw is equipped with the following low kickback bar/chain combination:

Guide bar CS4116Oregon160SDE/ CS3814Oregon140SDE/	
Saw chain	
CS3814Ore	egon S52
CS4116Ore	gon S56
For replacement use only above bars and chains	

Storage



- 1. Empty the fuel tank and run the engine out of fuel.
- 2. Empty the oil tank.
- 3. Clean the entire unit.
- 4. Store the unit in a dry place out of the reach of children.



Troubleshooting Guide

Problem	Cause	Remedy
Starting failure	Check fuel for water or substandard mixture	Replace with proper fuel
		Remove and dry the spark plug
		Then pull the starter again with no choke
		Replace with a new plug
Lack of power / Poor acceleration / Rough idling	Check for water or substandard mixture	Replace with proper fuel
	Check air filter and fuel filter for clogging	Clean
	Check carburetor for inadequate adjustment	Readjust speed needles
Oil does not come out	Check oil for substandard quality	Replace
	Check oil passage and ports for clogging	Clean

If the unit seems to need further service, please consult with an authorized service shop in your area.



Specifications

Power unit
Displacement CS3814
CS4116
Maximum engine power 1.2kW 1.5kW 1.5kW
Fuel
Fuel tank capacity
Chain oil
Oil tank capacity
Carburetor Diaphragm type
Fuel consumption at maximum engine power
Idling speed
Maximum speed with cutting attachment
Ignition system
Spark plug
Oil feeding system Mechanical plunger pump with adjuster
Sprocket Teeth x Pitch
CS3816
CS4116
Dimensions (L x W x H)
Dry weight (without guide bar and chain, empty tanks): 9.26 lbs
Cutting head:
Guide bar
Type:
Size:
CS381414in
CS411616in
Cutting length:
CS381414in
CS411616in
Saw chain
Туре:
CS3814
CS4116 Oregon® S56
Pitch:
CS3814
CS41163/8in Low Profile
Gauge:

Specifications are subject to change without notice.

1-Year Limited Warranty



Terms and Conditions

Ardisam, Inc., a manufacturing company, warrants this Earthquake® CHAIN SAW to be free from defects in the material or workmanship for a period of one year from the date of purchase. During the one year warranty of this product, Ardisam will furnish 100% parts and labor to correct any defect caused by faulty material or workmanship. Any unit used in a commercial application is covered for a period of 90 days after purchase.

If warranty work needs to be done, contact your place of purchase or Ardisam, Inc. for an authorized service center in your area. Ardisam will make the necessary repairs if a service center is not available. To obtain warranty service and/or replacement instructions, you must have prior approval from Ardisam before shipping your package to us by calling our customer service department at 800-345-6007 for a return material authorization number (RMA#). All items must be shipped prepaid. Ardisam, Inc. will at no charge, repair or replace, at their discretion, any defective part which falls under the conditions stated above.

Ardisam retains the right to change models, specifications and price without notice. This product if used as intended, will give you years of trouble free service. We hope you will enjoy the quality of our products for years to come.

For replacement parts, phone 800-345-6007 or go online to www.GetEarthquake.com.

This warranty applies to the original owner with a proof of purchase and is not transferable. It supersedes all other warranties either expressed or implied and all other obligations to liabilities on our part. Ardisam, Inc. does not assume, and does not authorize any other person to assume for us, any liability in connection with the sale of our products.

The warranty applies only to products which have not been subjected to negligent use, misuse, alteration, accident or repairs made by anyone not certified by Ardisam, Inc. This guarantee is void unless the warranty card is properly filled out and received by Ardisam, Inc., within 30 days of purchase or go to www.GetEarthquake.com for online registration.



Visit **www.ardisam.com** and discover more innovations that will benefit you throughout the year.



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